

BEFORE THE STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL PROTECTION

In re: IN-SITU OXIDATIVE TECHNOLOGIES, INC.
Petition for Variance

OGC File No.98-0168

FINAL ORDER GRANTING PETITION FOR
VARIANCE FROM RULE 62-522.300(2)(a)

On January 30, 1998, In-Situ Oxidative Technologies, Inc., (ISOTEC) filed a petition for variance from requirements in rule 62-522.300(2)(a) of the Florida Administrative Code, under section 120.542 of the Florida Statutes and rule 28-104.002 of the Florida Administrative Code. The petition was for a variance from rule 62-522.300(2)(a), which prohibits a zone of discharge for discharges through wells, in order to use its proprietary in-situ remedial technology. This process involves the installation of one or more temporary Class V underground injection control wells at the site of soil and ground water contamination. The Department received public comments from Asset Recovery Group, Inc., and Alpha Analytics, Inc., objecting to the variance petition as a result of the notice of receipt of ISOTEC's petition for variance published in the Florida Administrative Weekly on February 27, 1998.

1. Petitioner is located at 51A Everett Drive, Suite 100, Lawrenceville, New Jersey 08648.

2. ISOTEC has developed a proprietary in-situ remedial technology to destroy organic contamination through an oxidation process. The wells are used to inject into ground water a blend of catalysts, oxidizers, and viscosity enhancing reagents into or around specific areas of known contamination. ISOTEC's remedial method uses a site-specific delivery system providing sufficient distribution to selectively treat the contaminant around the of concern. The by-products from this reaction are water and carbon dioxide. Laboratory, field pilot programs, and a full-scale field program using this process have demonstrated a high degree of success in reducing the levels of organic contamination in ground water and soil in a short period of time.

3. Under rule 62-520.420 of the Florida Administrative Code, the standards for Class G-II ground waters include the primary and secondary drinking water standards of rules 62-550.310 and 62-550.320 of the Florida Administrative Code.

4. The proprietary catalyst contains a chelated iron complex. Upon injection into the ground water, it is expected that the concentrations of iron, a secondary drinking water standard, will temporarily exceed the ground water standard of 0.3 mg/L for iron within an area extending out in a radius of ten feet from the immediate point of injection. The presence of iron above the standard has the effect of discoloring the water and clothing washed in the water. No adverse impacts to human health are anticipated from the iron because such an exceedance will

occur only within ground water already contaminated by organics, and the ground water will not be used for domestic purposes. The ISOTEC series catalysts have a pH ranging from 5.0 to 5.5, while the ISOTEC series oxidizers have a pH ranging from 4.0 to 6.0. Upon injection of the catalyst and oxidizer into the subsurface it is expected that the pH of the ground water will temporarily fall below the secondary drinking water standard of 6.5 only within an area extending out in a radius of ten feet from the point of injection. No adverse impacts to human health are expected to occur from the temporary lowering of the pH because of the immense buffering capacity of the aquifer, and as with iron, the water will not be used for domestic purposes. No other constituents of the catalyst, including buffers, stabilizers, or reactants will exceed any primary or secondary drinking water standard.

5. The type of underground injection control wells will be Class V, Group 4, "injection wells associated with an aquifer remediation project," as described in rule 62-528.300(1)(e)4 of the Florida Administrative Code. Under rule 62-528.630(2)(c), "Class V wells associated with aquifer remediation projects shall be authorized under the provisions of a remedial action plan . . . provided the construction, operation, and monitoring of this Chapter are met."

6. The rule (62-522.300(2)(a)) from which this petition seeks a variance prohibits the Department from granting a zone of

discharge for a discharge through an injection well to Class G-II ground water. Strict adherence to this rule would preclude the Department from granting approval for the use of the ISOTEC remedial technology.

7. The applicable rules state in pertinent part:

62-522.300(1) . . . [N]o installation shall directly or indirectly discharge into any ground water any contaminant that causes a violation in the ground water quality standards and criteria for the receiving ground water as established in Chapter 62-520, F.A.C., except within a zone of discharge established by permit or rule pursuant to this chapter.

62-522.300(2) No zone of discharge shall be allowed under any of the following circumstances:

(a) Discharges through wells or sinkholes that allow direct contact with Class G-I and Class G-II ground water

8. ISOTEC has stated in its petition that to apply the zone of discharge prohibition to its use of this remediation process would create a substantial hardship and would violate the principles of fairness because the use of the process is to remediate contaminated ground water. Remediation would improve the water quality, and to prohibit any exceedance of the iron or pH standard, non-health-based standards, in such a small area of already contaminated ground water would violate the principles of fairness. This small and temporary exceedance is not the usual occurrence, nor are most dischargers involved in the remediation of contaminated ground water. By allowing the use of the ISOTEC

process, the clean-up of the contaminated ground water will be accelerated and returned to a usable condition.

9. Zones of discharge for the use of the ISOTEC remedial technology are necessary because of the temporary exceedance of the iron and pH standards in the ground water immediately surrounding the injection from the well. Because this ground water is contaminated and does not meet all applicable standards, allowing a zone of discharge as part of the approved remediation of organic contaminants meets the purpose of the underlying statute, which is to improve the quality of the waters of the state for beneficial uses. Such contaminated ground water would not be used for drinking purposes, thus posing no threat to human health.

10. The Department received comments about the petition for variance from a competitor and a laboratory. Those comments concerned the reagent to be used, the spreading of the contamination plume beyond the requested ten-foot radius, the concentration of iron not returning to the ground water standard as quickly as stated by the petitioner, and that 365 days may be too long for the pH of the remediated ground water to return to ambient conditions. ISOTECH has satisfactorily answered the concerns raised by the commenters in its original submittals, case histories, and in a point-by-point response to those comments. In addition, as a condition to the granting of this

variance petition, the Department has included specific monitoring conditions to detect any of the suggested failures.

11. For the foregoing reasons, ISOTEC has demonstrated that it is entitled to a variance from the prohibition of zones of discharge in rule 62-522.300(2)(a) for its ISOTEC remedial technology, with the conditions below.

a. Use of the ISOTECH remedial process must be through a Department-approved remedial action plan for an aquifer remediation project and such approval shall not be solely by a delegated local program.

b. The discharge to the ground water must be through a Class V, Group 4 underground injection control well which meets all of the applicable construction, operating, and monitoring requirements of chapter 62-528 of the Florida Administrative Code.

c. The extent of the zone of discharge for iron and pH shall be a ten-foot radius from the point of injection, which area shall always be within the plume of the contaminated ground water.

d. The injection of reagents shall be at such a rate and volume that no undesirable migration occurs of either the reagents or the contaminants already present in the aquifer.

e. The Department-approved remedial action plan shall address appropriate ground water monitoring requirements associated with the use of the ISOTECH remedial process for

remediation based on site-specific hydrogeology and conditions. These shall include ground water monitoring before use of the ISOTECH remedial process for the parameters pertinent to that process, and monitoring of ground water downgradient from the injection points for at least one year after active remediation.

This final order will become final unless a petition for an administrative proceeding is filed pursuant to the provisions of sections 120.569 and 120.57 of the Florida Statutes. Any person whose substantial interests are affected by the Department's action may file such a petition. The petition must contain the information set forth below and must be filed (received) in the Department's Office of General Counsel, 3900 Commonwealth Boulevard, MS 35, Tallahassee, Florida 32399-3000. Petitions filed by ISOTECH or any of the parties listed below must be filed within 21 days of receipt of this order. Petitions filed by any other person must be filed within 21 days of publication of the public notice or within 21 days of receipt of this order, whichever occurs first. A petitioner must mail a copy of the petition to In-Situ oxidative Technologies, Inc., 51A Everett Drive, Suite 100, Lawrenceville, New Jersey, at the time of filing. The failure of any person to file a petition within the appropriate time period shall constitute a waiver of that person's right to request an administrative determination (hearing) under sections 120.569 and 120.57 of the Florida Statutes, or to intervene in this proceeding and participate as a

party to it. Any subsequent intervention will only be at the discretion of the presiding officer upon the filing of a motion in compliance with rule 28-106.205 of the Florida Administrative Code.

A petition must contain the following information:

(a) The name, address, and telephone number of each petitioner; the Department case identification number and the county in which the subject matter or activity is located;

(b) A statement of how and when each petitioner received notice of the Department action;

(c) A statement of how each petitioner's substantial interests are affected by the Department action;

(d) A statement of the material facts disputed by the petitioner, if any;

(e) A statement of facts that the petitioner contends warrant reversal or modification of the Department action;

(f) A statement of which rules or statutes the petitioner contends require reversal or modification of the Department action; and

(g) A statement of the relief sought by the petitioner, stating precisely the action that the petitioner wants the Department to take.

Because the administrative hearing process is designed to formulate final agency action, the filing of a petition means that the Department final action may be different from the position

taken by it in this order. Persons whose substantial interests will be affected by any such final decision of the Department on the petitions have the right to petition to become a party to the proceeding, in accordance with the requirements set forth above.

Mediation under section 120.573 of the Florida Statutes is not available for this proceeding.

This action is final and effective on the date filed with the Clerk of the Department unless a petition is filed in accordance with the above.

A party to this order has the right to seek judicial review of it under section 120.68 of the Florida Statutes, by filing a notice of appeal under rule 9.110 of the Florida Rules of Appellate Procedure with the clerk of the Department in the Office of General Counsel, Mail Station 35, 3900 Commonwealth Boulevard, Tallahassee, Florida 32399-3000, and by filing a copy of the notice of appeal accompanied by the applicable filing fees with the appropriate district court of appeal. The notice must be filed within thirty days after this order is filed with the clerk of the Department.

DONE AND ORDERED this 22nd day of April 1998 in
Tallahassee, Florida.

Virginia B. Wetherell
Virginia B. Wetherell
Secretary
Department of Environmental
Protection
3900 Commonwealth Boulevard
MS 10
Tallahassee, Florida 32399-3000
Telephone 850/488-1554

FILING AND ACKNOWLEDGMENT FILED, on this date, pursuant to s.
120.52, Florida Statutes, with the designated Department Clerk,
receipt of which is hereby acknowledged.

James A. Chapman 4/24/98
clerk Date

Copies furnished to:

Richard Ruscito, Petroleum Cleanup Section 4
Will Evans, UIC
Cynthia Christen, OGC

CERTIFICATE OF SERVICE

I certify that a copy of the foregoing Final Order has been furnished by U.S. Mail to Thomas Andrews, P.E., Vice President, In-Situ Oxidative Technologies, Inc., 51A Everett Drive, Suite 100, Lawrenceville, New Jersey 08648 on this _____ day of April 1998.

Cynthia K. Christen
Assistant General Counsel

Department of
Environmental Protection
3900 Commonwealth Blvd.
MS 35
Tallahassee, FL 32399-3000
Telephone 850/921-9610